

Revised Claims

What is claimed is:

1. A bicycle crank and pedal assembly comprising (i) a crank arm (2) with two cavities (6 and 9), (ii) a plate (7) inside the first cavity (6), (iii) a bar (10) inside the second cavity (9), (iv) a shaft (5) with one end fixed to the pedal (4) and the other end fixed to the plate (7) in the first cavity (6), (v) a spindle (11) fixed to the bar (10) in the second cavity (9) and coaxially mounted with the shaft (5), and (vi) a pedal (4) outside the arm (2) and fixed to one end of the shaft (5).
2. The bicycle crank and pedal assembly in Claim 1, wherein the distance between the axes of the crank axle (1) and the pedal spindle (11) (i) increases from the minimum value to the maximum value in the first half of the power down stroke, (ii) remains at the maximum value in the second half of the power down stroke, (iii) decreases from the maximum value to the minimum value in the first half of the return upstroke, and (iv) remains at the minimum value in the second half of the return upstroke.
3. The bicycle crank and pedal assembly in Claim 1, wherein a rotation of the pedal (4) about the spindle (11) causes (i) the shaft (5) and the plate (7) to rotate by the same angle about the axis of the spindle (11), and (ii) the bar (10) and the spindle (11) to change distances from the crank axle (1) in the first half of the power down stroke and the first half of the return upstroke.